Aug. 22, 1933. E. P. KINNE 1,923,674

COUPLER MECHANISM

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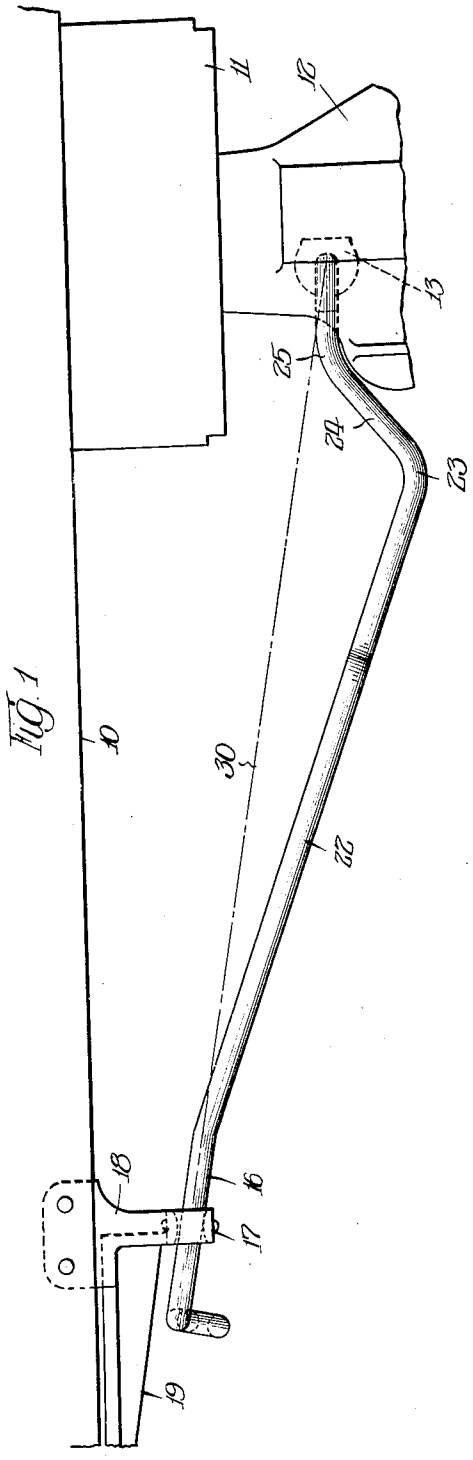


Fig. 1

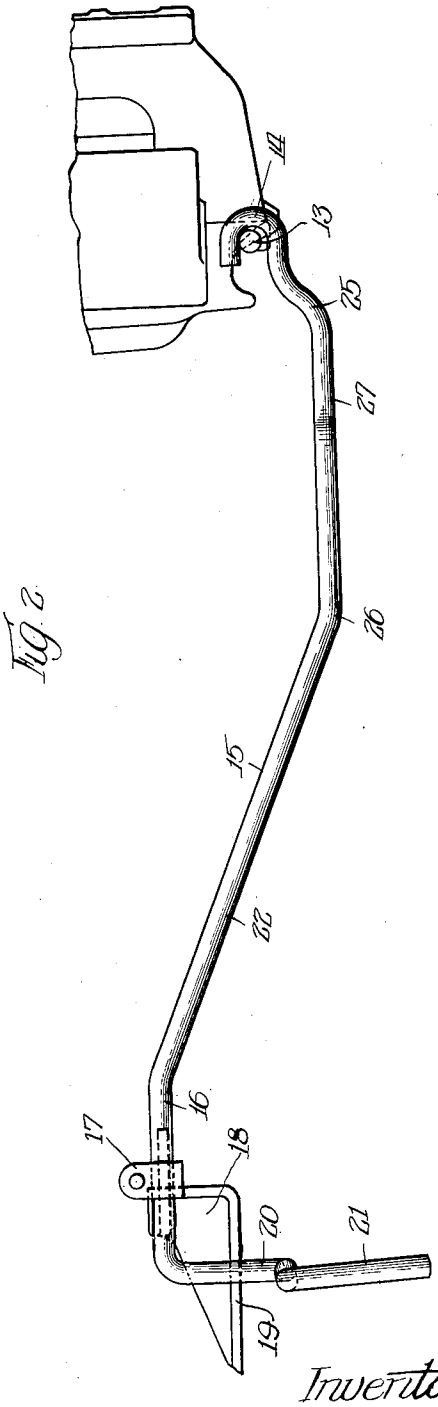


Fig. 2

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COUPLER MECHANISM

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3 Claims. (Cl. 213—167)

This invention pertains to coupler mechanism, and more particularly to means for operating a coupler from the side of the car.

An object of the invention is to improve the operation of couplers, and more particularly standard A. R. A. rotary type couplers, in a manner whereby the coupler can always be operated positively and easily through the medium of the uncoupling rod.

Another object is to provide simple, reliable, efficient and inexpensive coupler operating mechanism having cooperating parts whereby a maximum operating force may be transmitted to the lock for facilitating the operation of the coupler.

Still another object is to provide coupled operating mechanism which will fulfill all requirements of service and manufacture and in which the operating handle will always seek a position such that there will be no tendency to disrupt the parts nor to have any interference with the relative movement of the coupled cars or cooperating parts.

A further object is to provide a coupler mechanism which will effect a great saving in the number of parts now in use, as for instance, the elimination of slack devices between the operating rod and the coupler lifter.

Still further object is to provide a construction whereby the operating rod for the coupler is disposed in such a manner as to clear the train lines and will provide weight for returning the operating handle to inoperative position upon release thereof from knuckle throw position or any intermediate positions.

Yet further object is to provide coupler operating mechanism of such construction and disposition as to prevent interference or damage to said mechanism or adjacent structure when said mechanism and structure of adjacent cars is moved relatively thereto as in the case of opposing couplers passing each other.

With these and various other objects in view, the invention may consist of certain novel features of construction and operation, as will be more fully described and particularly pointed out in the specification, drawing and claims appended hereto.

In the drawing, which illustrates an embodiment of the device and wherein like reference characters are used to designate like parts—

Figure 1 is a fragmentary top plan view of a railway car and coupler mechanism embodying the invention; and

Figure 2 is a fragmentary view in front elevation of the coupler mechanism disclosed in Figure 1 of the drawing.

The usual car end sill 10 may be provided with the necessary running and operating gear including a striking casting 11, buffing block and its cooperating parts supporting the standard A. R. A. rotary type coupler 12. The coupler illustrated is of the bottom lifter type, the usual operating mechanism for the knuckle thereof being provided with the rotor having an eye 13 for cooperative attachment with a hook portion 14 of the uncoupling rod 15, said uncoupling rod extending toward the side of the car and having an elongated bearing portion 16 supported in the bearing 17 in such a manner as to have relative movements of rotation and translation with respect thereto, said bearing being carried by a bracket 18 secured to the end sill of the car and provided with a portion 19 having cooperation with a depending portion 20 of the operating rod to prevent slack between the rod and the bracket regardless of any position of the coupler, it being understood that the coupler rod follows the movement of the coupler. The depending portion 20 terminates in an off-set handle portion 21, the disposition of the weight of the handle being such as to tend to rotate the rod in a clockwise direction upon release thereof after operation to thereby return the handle to inoperative position to prevent said handle obstructing the space between cars.

The rod adjacent the operating portion 16 is off-set downwardly and in an outboard direction as at 22 to provide clearance for train lines, the said portion extending outwardly to the knuckle 23 (as viewed in Figure 1), disposed in an outboard direction from the vertical plane 30 through rotor eye 13 and the bearing 17. The rod then extends inwardly a short distance as indicated by the portion 24 and is then knuckled as at 25 to extend directly toward the coupler eye 13, to which it is secured.

Regarding the rod in end elevation, as illustrated in Figure 2, portion 22 is knuckled as at 26 and is provided with a substantially horizontal portion 27 clearing the train lines and extending substantially to the knuckle 25 where it may extend inwardly to form the hook portion 14 cooperating with the rotor 13.

With this construction it will be seen that the rod is so disposed that it will adequately clear train lines, and the tendency of said rod will be to rotate in a clockwise direction to thereby tend to maintain the coupler operating mechanism in locked position. Not only is this true but the chances of damaging the operating gear is

lessened as in the case where opposing couplers slip by each other. When this occurs, the usual uncoupling rod frequently becomes damaged, but in the present case, the couplers will merely slip over the opposing uncoupling rod and no damage will be done. Unlocking is effected by raising the handle 21 to rotate the rod in a counterclockwise direction, thereby imparting unlocking movement to the rotor eye 13. In so moving the coupler rod, the weight of the rod still will be such that upon release of the handle 21 the rod will rotate, or tend to rotate, in a clockwise direction to return the handle to inoperative position where it cannot obstruct the space between cars and will not be a menace to trainmen or others passing between or working adjacent the ends of the cars.

It is to be understood that I do not wish to be limited by the exact embodiment of the device shown, which is merely by way of illustration and not limitation, as various and other forms of the device will of course be apparent to those skilled in the art without departing from the spirit of the invention or the scope of the claims.

I claim:

1. In coupler mechanism having a movable lock, the combination of a rotary member on the coupler for transmitting operating movements to the coupler lock, a bracket, and a handled operating rod supported by said bracket and extending to and directly connected to said rotary member for movement therewith to operate said coupler lock, said rod having a horizontal portion adjacent said bracket to form a bearing for said rod, said rod having a portion offset in an outboard direction beyond the axis of rotation thereof through said horizontal portion and said rotary member, tending to prevent rotation of the operating rod which would release the coupler anticreep when the coupler is in locked position, said offset portion having a part thereof disposed below said rotary member providing an unbalanced condition in unlocked position of the coupler to return the handle to locked position and rotate the rotary member in a direction to lock said mechanism, and providing clearance in locked position of the coupler whereby damage to the rod and associated mechanism is prevented in case of misalignment of adjacent couplers in coupling operation.

2. In coupler mechanism having a movable lock, the combination of a rotary member on the coupler for transmitting operating movements to the coupler lock, a bracket, and a handled operating rod supported by said bracket and extending to and directly connected to said rotary member for movement therewith to operate said coupler lock, said rod having an offset portion extending in an outboard direction and downwardly below the axis of rotation thereof through said bracket and rotary member providing an unbalanced condition in locked position of the coupler tending to prevent rotation of the operating rod which would release the coupler anti-creep and to return the handle to locked position, said downwardly extending part of said offset portion providing clearance whereby damage to the rod and associated mechanism is prevented in case of misalignment of adjacent couplers in coupling operation.

3. In coupler mechanism having a movable lock, the combination of a rotary member on the coupler for transmitting operating movements to the coupler lock, a bracket, and a handled operating rod supported by said bracket and extending to and directly connected to said rotary member for movement therewith to operate said coupler lock, said bracket having a member adapted to cooperate with said rod for preventing increase of oscillation of said rod, said rod having a horizontal portion adjacent said bracket to form a bearing for said rod and having a portion offset beyond the vertical plane through the axis of the horizontal portion and intersecting the rotary member, tending to prevent rotation of the operating rod which would release the coupler anti-creep when the coupler is in locked position, said offset portion having a part thereof disposed below said rotary member to provide an unbalanced condition in unlocked position of the coupler to return the handle to locked position and rotate the rotary member in direction to lock said mechanism and providing clearance in locked position of the coupler whereby damage to the rod and associated mechanism is prevented in case of misalignment of adjacent couplers in coupling operation.

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